

Process for the production of olefins

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Abstract

Olefines, including C10+ olefines, are obtained from an n-paraffin feedstock by oxidative cracking by mixing with oxygen in a weight ratio to hydrocarbon of 0.014-0.23: 1, preheating to 20-150 DEG C. below reaction temperature, introducing tangentially into a reactor containing no solids and reacting at 500-750 DEG C. for 0.02-1 second. Suitable feeds contain 12-40 carbon atoms, e.g. gas oil, crude oils, petrolatum, wax or n-hexadecane; steam or nitrogen may be added to assist vaporization. Products boiling above the desired products may be recycled.

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Preparation of α -olefins containing 10-20 carbons in a straight chain. (Compagnie Francaise de Raffinage). (1964), 16 pp. FR 1379027 19641120 Patent written in Unavailable. Application: FR 19631008. CAN 62:51097 AN 1965:51097 CAPLUS

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The title compds. (I) are important intermediates. I are obtained from n-paraffins (II) by cracking in the presence of O (preferably dil.), in an empty reactor, at 575-650°. The II-O mixt., with a ratio II-O 1: 0.03-1: 0.07, must be a completely homogenous gaseous mixt., preheated at 20-150° below the reaction temp.; the reaction time varies between 0.1-0.5 sec. After the reaction, the gaseous mixt. is quenched at 200-50°, I is sepd., and the oxidn. products and the hydrocarbons with higher b.p. are recycled with the new charge. Thus, in a cylindrical reactor of 2.7 cm. diam., and a vol. of 14 cm.3 is established a stream of n-C16H34 (IIa) and air, with the listed conditions. Recycling the nonconverted II and the oxygenated products, increases the conversion of II, and gives a slightly higher yield of I. temp., 575°, 650°, 560°, 575°; molar ratio O-IIa, 0.4, 0.4, 0.2, 0.4; reaction time, sec., 0.1, 0.2, 0.5, 2; conversion (%) IIa, 26.2, 38.2, 34.0, 41.9; O, 77.6, 88.2, 85.7, 95.4; yields in wt.-% of the converted IIa; C2H4, 11.5, 14.2, 11.2, 11.7; C3H6, 7.5, 8.2, 6.5, 5.2; C4H8, 6.2, 6.3, 5.7, 4.0; α -olefins greater than C5, 53.8, 52.0, 52.0, 40.5; oxygenated product, 20.6, 15.0, 15.7, 31.9; H2O, 11.4, 6.9, 3.2, 7.2; CO, 2.5,

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